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=> S Slobedman/au OR Abendroth/au OR Jenkins/au
L1          11 SLOBEDMAN/AU OR ABENDROTH/AU OR JENKINS/AU

=> S L1 AND IL-10
L2           0 L1 AND IL-10

=> S L1 AND CMV
L3           0 L1 AND CMV

=> S (Interleukin-10 OR IL-10) (S) Cytomegalovirus AND pd<=20041126
   2 FILES SEARCHED...
L4         114 (INTERLEUKIN-10 OR IL-10) (S) CYTOMEGALOVIRUS AND PD<=20041126

=> Dup Rem L4
PROCESSING COMPLETED FOR L4
L5           53 DUP REM L4 (61 DUPLICATES REMOVED)
                ANSWERS '1-21' FROM FILE MEDLINE
                ANSWERS '22-26' FROM FILE BIOSIS
                ANSWERS '27-52' FROM FILE CAPLUS
                ANSWER '53' FROM FILE EMBASE

=> D Kwic L5 1-52

L5   ANSWER 1 OF 53     MEDLINE on STN                  DUPLICATE 1
TI   Human cytomegalovirus-encoded interleukin-10
     homolog inhibits maturation of dendritic cells and alters their
     functionality.
SO   Journal of virology, (2004 Aug) Vol. 78, No. 16, pp. 8720-31.
     Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
     Report No.: NLM-PMC479089.
AB   . . . immunity, and prevents the activation and polarization of naive T
     cells towards protective gamma interferon-producing effectors. We
     hypothesized that human cytomegalovirus (HCMV) utilizes its
     viral IL-10 homolog (cmvIL-10) to attenuate DC
     functionality, thereby subverting the efficient induction of antiviral
     immune responses. RNA and protein analyses demonstrated. . .

L5   ANSWER 2 OF 53     MEDLINE on STN                  DUPLICATE 2
TI   Shaping phenotype, function, and survival of dendritic cells by
     cytomegalovirus-encoded IL-10.
SO   Journal of immunology (Baltimore, Md. : 1950), (2004 Sep 1) Vol.
     173, No. 5, pp. 3383-91.
```

Journal code: 2985117R. ISSN: 0022-1767. L-ISSN: 0022-1767.

L5 ANSWER 3 OF 53 MEDLINE on STN DUPLICATE 3
TI Human cytomegalovirus interleukin-10 downregulates metalloproteinase activity and impairs endothelial cell migration and placental cytotrophoblast invasiveness in vitro.
SO Journal of virology, (2004 Mar) Vol. 78, No. 6, pp. 2831-40.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC353759.

L5 ANSWER 4 OF 53 MEDLINE on STN DUPLICATE 4
TI A novel viral transcript with homology to human interleukin-10 is expressed during latent human cytomegalovirus infection.
SO Journal of virology, (2004 Feb) Vol. 78, No. 3, pp. 1440-7.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC321375.

L5 ANSWER 5 OF 53 MEDLINE on STN DUPLICATE 5
TI CXCL10 production from cytomegalovirus-stimulated microglia is regulated by both human and viral interleukin-10.
SO Journal of virology, (2003 Apr) Vol. 77, No. 8, pp. 4502-15.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC152158.

L5 ANSWER 6 OF 53 MEDLINE on STN DUPLICATE 6
SO AIDS (London, England), (2003 Nov 21) Vol. 17, No. 17, pp. 2445-50.
Journal code: 8710219. ISSN: 0269-9370. L-ISSN: 0269-9370.
AB . . . which coincided with the study visits. METHODS: Blood was obtained at every study visit and was used for measurements of cytomegalovirus cell-mediated immunity (lymphocyte proliferation, IFN-gamma, IL-2, and IL-10 production), cytomegalovirus viral load, CD4 cell count, and HIV viral load. A logistic-normal model was used to analyse outcome data with repeated. . . 0.02] and marginally increased with every log10 RNA copies/ml HIV viral load (OR 2; P = 0.07). CD4 cell counts, cytomegalovirus lymphocyte proliferation, IL-2, and IL-10 did not reach significance as predictors of cytomegalovirus reactivation. However, cytomegalovirus IFN-gamma production significantly decreased the risk of cytomegalovirus reactivation (OR 0.03; P = 0.04). CONCLUSION: Cytomegalovirus-specific IFN-gamma. . .

L5 ANSWER 7 OF 53 MEDLINE on STN DUPLICATE 7
TI Cytomegalovirus infection induces production of human interleukin-10 in macrophages.
SO European journal of clinical microbiology & infectious diseases : official publication of the European Society of Clinical Microbiology, (2003 Dec) Vol. 22, No. 12, pp. 737-41. Electronic Publication: 2003-11-11.
Journal code: 8804297. ISSN: 0934-9723. L-ISSN: 0934-9723.
AB Earlier findings have suggested that the balance between interleukin-10 and tumor necrosis factor alpha levels in serum may influence the outcome of cytomegalovirus infection in renal transplant recipients. Therefore, the aim of the present study was to investigate whether human cytomegalovirus induces interleukin-10 production in macrophages. Experiments using human cytomegalovirus (strain 2006), ultraviolet-inactivated cytomegalovirus, and mock-infected differentiated THP-1 cells with or without ganciclovir or monoclonal anti-tumor necrosis factor alpha antibodies were performed. Cytomegalovirus-infected cells produced significantly higher levels of human interleukin-

10 mRNA and interleukin-10 than
ultraviolet-inactivated cytomegalovirus or mock-infected cells.
The addition of ganciclovir had little effect on interleukin-10
production. Anti-tumor necrosis factor alpha antibodies appeared to
reduce the interleukin-10 levels. In conclusion, human
cytomegalovirus infection of macrophages induces production of
human interleukin-10. This requires viral entry, but
not full viral replication.

L5 ANSWER 8 OF 53 MEDLINE on STN DUPLICATE 8
TI Crystal structure of human cytomegalovirus IL-
10 bound to soluble human IL-10R1.
SO Proceedings of the National Academy of Sciences of the United States of
America, (2002 Jul 9) Vol. 99, No. 14, pp. 9404-9. Electronic
Publication: 2002-07-01.
Journal code: 7505876. ISSN: 0027-8424. L-ISSN: 0027-8424.
Report No.: NLM-PMC123153.. . .
AB . . . critical immune and inflammatory responses by way of interactions
with its high- (IL-10R1) and low-affinity (IL-10R2) cell surface
receptors. Human cytomegalovirus exploits the IL-
10 signaling pathway by expressing a functional viral IL
-10 homolog (cmvIL-10), which shares only 27% sequence identity
with hIL-10 yet signals through IL-10R1 and IL-10R2. To define the
molecular. . .

L5 ANSWER 9 OF 53 MEDLINE on STN DUPLICATE 9
SO Blood, (2002 Dec 15) Vol. 100, No. 13, pp. 4521-8. Electronic
Publication: 2002-08-01.
Journal code: 7603509. ISSN: 0006-4971. L-ISSN: 0006-4971.
AB . . . was found to suppress Aspergillus-specific lymphoproliferation (P
=.037) and release of IFN-gamma in culture supernatants (P =.017). In
contrast to cytomegalovirus- and tetanus toxoid-specific T-cell
responses, Aspergillus-specific T-cell reconstitution late after
allogeneic SCT was characterized by low stimulation indices and a low
IFN-gamma/IL-10 ratio. In addition,
phosphoantigen-reactive V(gamma)9/V(delta)2 T-cell clones from healthy
individuals were found to produce significant amounts of tumor necrosis
factor. . .

L5 ANSWER 10 OF 53 MEDLINE on STN DUPLICATE 10
TI Potent immunosuppressive activities of cytomegalovirus-encoded
interleukin-10.
SO Journal of virology, (2002 Feb) Vol. 76, No. 3, pp. 1285-92.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC135865.
CN 0 (CMV IL-10 protein, Cytomegalovirus); 0
(Immunosuppressive Agents); 0 (Receptors, Interleukin); 0 (Receptors,
Interleukin-10); 0 (Recombinant Proteins); 0 (Viral Proteins)

L5 ANSWER 11 OF 53 MEDLINE on STN DUPLICATE 12
SO Transplantation, (2001 Aug 27) Vol. 72, No. 4, pp. 699-706.
Journal code: 0132144. ISSN: 0041-1337. L-ISSN: 0041-1337.
AB . . . factors were analyzed by multivariate analysis using the Cox
proportional hazards model. RESULTS: Acute graft-versus-host disease was
independently associated with IL-10 gene polymorphisms
both from the recipient (relative risk=7.9, P<0.0001) and the donor
(relative risk=3.5, P=0.02), a donor's positive serology for
cytomegalovirus, and HA-1 mismatches in HLA-A*0201 individuals
(relative risk=2.8, P=0.05). Chronic graft-versus-host disease was
independently associated with IL-6 gene polymorphism from. . .

L5 ANSWER 12 OF 53 MEDLINE on STN DUPLICATE 13

SO Journal of virology, (2000 May) Vol. 74, No. 10, pp. 4658-65.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC111986.
AB . . . and NF-IL-6. Elevated Vpr was also shown to increase transcription of the NF-kappaB and NF-IL-6 enhancer-containing viral promoters for HIV, cytomegalovirus, and simian virus 40, as well as increase the expression of IL-6 and IL-10 in primary macrophages and in A549 cells, tumor necrosis factor alpha expression in primary T cells, and IL-6 and gamma. . .

L5 ANSWER 13 OF 53 MEDLINE on STN DUPLICATE 14
TI Human cytomegalovirus harbors its own unique IL-10 homolog (cmvIL-10).
SO Proceedings of the National Academy of Sciences of the United States of America, (2000 Feb 15) Vol. 97, No. 4, pp. 1695-700.
Journal code: 7505876. ISSN: 0027-8424. L-ISSN: 0027-8424.
Report No.: NLM-PMC26498.
AB We identified a viral IL-10 homolog encoded by an ORF (UL111a) within the human cytomegalovirus (CMV) genome, which we designated cmvIL-10. cmvIL-10 can bind to the human IL-10 receptor and can compete with human IL-10 for binding sites, despite the fact that these two proteins are only 27% identical. cmvIL-10 requires both subunits of the IL-10 receptor complex to induce signal transduction events and biological activities. The structure of the cmvIL-10 gene is unique by itself.. . .

L5 ANSWER 14 OF 53 MEDLINE on STN DUPLICATE 15
SO The Journal of rheumatology, (2000 Jul) Vol. 27, No. 7, pp. 1601-5.
Journal code: 7501984. ISSN: 0315-162X. L-ISSN: 0315-162X.
AB . . . complete adjuvant (FCA), followed by immunization of CII in Freund's incomplete adjuvant (FIA) 3 weeks later (CIA mice). The plasmid cytomegalovirus (pCMV) vector encoding IL-10 (pCMV-IL-10) was inoculated intradermally into DBA/1 Lac/J mice (pCMV-IL-10 CIA mice) one week prior to first immunization with CII. CIA mice inoculated with the backbone pCMV vector instead of. . .

L5 ANSWER 15 OF 53 MEDLINE on STN DUPLICATE 16
SO American journal of physiology. Lung cellular and molecular physiology, (2000 Nov) Vol. 279, No. 5, pp. L872-7.
Journal code: 100901229. ISSN: 1040-0605. L-ISSN: 1040-0605.
AB . . . to induce IL-10 transgene expression in murine lungs for treatment of endotoxin-induced lung inflammation. Gene transfer was performed with a cytomegalovirus (CMV)-IL-10 plasmid with the aid of the liposomal agents LipofectAMINE and N-[1-(2,3-dioleoyl)propyl]-N,N, N-trimethylammonium methylsulfate (DOTAP). Administration of the endotoxin caused a. . .

L5 ANSWER 16 OF 53 MEDLINE on STN DUPLICATE 17
TI Primate cytomegaloviruses encode and express an IL-10-like protein.
SO Virology, (2000 Mar 15) Vol. 268, No. 2, pp. 272-80.
Journal code: 0110674. ISSN: 0042-6822. L-ISSN: 0042-6822.
AB An open reading frame (ORF) with homology to interleukin-10 (IL-10) has been identified in rhesus cytomegalovirus (RhCMV). The IL-10-like protein is generated from a multispliced, polyadenylated early gene transcript encompassing part of the corresponding UL111A ORF. . .

L5 ANSWER 17 OF 53 MEDLINE on STN DUPLICATE 18

TI The role of the tumor necrosis factor system and interleukin-10 during cytomegalovirus infection in renal transplant recipients.
SO The Journal of infectious diseases, (2000 Jan) Vol. 181, No. 1, pp. 51-7.
Journal code: 0413675. ISSN: 0022-1899. L-ISSN: 0022-1899.
AB The effects of cytomegalovirus (CMV) infection on monocyte and T cell activation and the role of the tumor necrosis factor (TNF) system and interleukin (IL)-10 were studied in a prospective study of 25 renal transplant recipients. Ten patients developed CMV disease (group A), 5 developed. . .

L5 ANSWER 18 OF 53 MEDLINE on STN DUPLICATE 19
TI Murine cytomegalovirus infection down-regulates MHC class II expression on macrophages by induction of IL-10.
SO Journal of immunology (Baltimore, Md. : 1950), (1999 Jun 1) Vol. 162, No. 11, pp. 6701-7.
Journal code: 2985117R. ISSN: 0022-1767. L-ISSN: 0022-1767.

L5 ANSWER 19 OF 53 MEDLINE on STN DUPLICATE 20
SO Veterinary immunology and immunopathology, (1998 May 15) Vol. 63, No. 1-2, pp. 139-48. Ref: 48
Journal code: 8002006. ISSN: 0165-2427. L-ISSN: 0165-2427.
AB . . . responses. Some of the viral defense molecules that interfere with the functions of cytokines include the EBV protein BCRF1 (viral IL-10) which blocks synthesis of cytokines such as IFN-gamma, viral IL-17 and IL-8 receptor encoded by the herpesvirus saimiri genome and chemokine receptor homologues of Epstein-Barr virus, herpesvirus saimiri and cytomegalovirus. These immunomodulatory tactics function to protect the host from the lethal inflammatory effects as well as inhibit the local inflammatory. . .

L5 ANSWER 20 OF 53 MEDLINE on STN DUPLICATE 21
SO Journal of immunological methods, (1997 Mar 10) Vol. 202, No. 1, pp. 41-8.
Journal code: 1305440. ISSN: 0022-1759. L-ISSN: 0022-1759.
AB . . . an immunoadhesin. A recombinant adenovirus, rendered replication defective by deletion of the E1 gene, was constructed to contain the murine interleukin-10 gene fused in frame with the hinge, CH2, and CH3 domains of the murine immunoglobulin gamma 1 heavy chain constant region gene under the control of the human cytomegalovirus promoter. The resultant recombinant virus, Ad5.hCMV.mIL-10:HFc, was used to transduce several cell types. The expressed protein, mIL-10:HFc, is secreted as. . .

L5 ANSWER 21 OF 53 MEDLINE on STN DUPLICATE 22
SO The Journal of experimental medicine, (1995 Jun 1) Vol. 181, No. 6, pp. 2289-93.
Journal code: 2985109R. ISSN: 0022-1007. L-ISSN: 0022-1007.
Report No.: NLM-PMC2192075.
AB . . . block its interactions with cellular receptors. Mice were treated intraperitoneally with cationic liposomes containing 200 micrograms of either a pCMV (cytomegalovirus)/p55 expression plasmid that contains the extracellular domain and transmembrane region of the human p55 TNF receptor, or a pcD-SR-alpha/hIL-10 expression plasmid containing the DNA for human interleukin 10. 48 h later, mice were challenged with lipopolysaccharide (LPS) and D-galactosamine. Pretreatment of mice with p55 or IL-10 cDNA-liposome complexes. . .

L5 ANSWER 22 OF 53 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN

SO Current Pharmaceutical Design, (2004) Vol. 10, No. 31, pp. 3873-3884. print.
ISSN: 1381-6128 (ISSN print).
IT Major Concepts
Biochemistry and Molecular Biophysics
IT Chemicals & Biochemicals
cytokine; cytomegalovirus interleukin-10 [CMVIL-10]; interferon-lambda-1 [IFN-lambda-1]; interferon-lambda-1-receptor-1 [IFN-lambda-R-1]; interferon-lambda-2 [IFN-lambda-2]; interferon-lambda-3 [IFN-lambda-3]; interleukin-10 [IL-10]: intercalated dimer, six-helix bundle domains, viral gene homologs; interleukin-10. . .

L5 ANSWER 23 OF 53 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
SO Hepatology, (October 2003) Vol. 38, No. 4 Suppl. 1, pp. 462A. print.
Meeting Info.: 54th Annual Meeting of the American Association for. . .
AB. . . cytometry for activation, memory, differentiation and tissue homing markers. The specificity for hepatitis C virus (HCV), Epstein Barr virus (EBV), cytomegalovirus (CMV), influenza A virus, vaccinia virus peptides and tetanus toxoid protein was analyzed in a 6-h ex vivo stimulation assay followed by intracellular staining for IFN-gamma, TNF-alpha, IL-4 and IL-10. Maturation of CD4/CD8 double-positive cells and CD4 and CD8 single-positive cells was assessed by molecular analysis of T-cell Receptor Excision. . .

L5 ANSWER 24 OF 53 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
TI CXCL10 production from cytomegalovirus-stimulated human microglia: Regulation by interleukin-10.
SO Journal of Neurovirology, (June, 2002) Vol. 8, No. Supplement 1, pp. 58. print.
Meeting Info.: 4th International Symposium of NeuroVirology and the 10th Conference. . .

L5 ANSWER 25 OF 53 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
TI Differential effect of cytomegalovirus (CMV) on G-CSF, GM-CSF, IL-6, IL-10 and TGF-beta production by human bone marrow stromal cells.
SO Experimental Hematology (Charlottesville), (1994) Vol. 22, No. 8, pp. 812.
Meeting Info.: 23rd Annual Meeting of the International Society for Experimental Hematology. Minneapolis, Minnesota,. . .

L5 ANSWER 26 OF 53 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
TI Differential effect of cytomegalovirus (CMV) on G-CSF GM-CSF, IL-6, IL-10 and TGF-beta production by human bone marrow stromal cells.
SO British Journal of Haematology, (1994) Vol. 87, No. SUPPL. 1, pp. 100.
Meeting Info.: First Meeting of the European Haematology Association. Brussels, Belgium. June 2-5,. . .

L5 ANSWER 27 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 11
TI Reduced expression of HLA class II molecules and interleukin-10- and transforming growth factor β1-independent suppression of T-cell proliferation in human cytomegalovirus-infected macrophage cultures
SO Journal of Virology (2001), 75(11), 5174-5181

CODEN: JOVIAM; ISSN: 0022-538X

IT Antigen presentation
CD4-positive T cell
Human herpesvirus 5
Immunosuppression
(HLA class II mols. expression decrease and interleukin-10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus -infected macrophages)

IT Interleukin 10
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(HLA class II mols. expression decrease and interleukin-10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus -infected macrophages)

IT Histocompatibility antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(HLA-DP; HLA class II mols. expression decrease and interleukin -10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus -infected macrophages)

IT Histocompatibility antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(HLA-DQ; HLA class II mols. expression decrease and interleukin -10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus -infected macrophages)

IT Histocompatibility antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(HLA-DR; HLA class II mols. expression decrease and interleukin -10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus -infected macrophages)

IT Macrophage
(infection; HLA class II mols. expression decrease and interleukin-10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus-infected macrophages)

IT T cell (lymphocyte)
(proliferation; HLA class II mols. expression decrease and interleukin-10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus-infected macrophages)

IT Transforming growth factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(β1-; HLA class II mols. expression decrease and interleukin-10- and transforming growth factor β1-independent suppression of T-cell proliferation by human cytomegalovirus-infected macrophages)

L5 ANSWER 28 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN

SO Zhonghua Weishengwuxue He Mianyixue Zazhi (2004), 24(12), 950-954
CODEN: ZWMZDP; ISSN: 0254-5101

AB . . . overexpression of IL-10. Allitridin up-regulated the expression of T-bet mRNA and IFN-γ and inhibited the expression of GATA-3 mRNA and IL-10 in MCMV infected mice, indicating a TH1

dominant state which will enhance the specific cellular immune reactions against cytomegalovirus and be helpful for clearance of cytomegalovirus in host.

IT Interleukin 10
RL: BSU (Biological study, unclassified); BIOL (Biological study) (effects of allitridin on expression of transcription factor T-bet/GATA-3 in mice infected by murine cytomegalovirus)

L5 ANSWER 29 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Experimental Gerontology (2004), 39(4), 607-613
CODEN: EXGEAB; ISSN: 0531-5565
IT Antigens
Interleukin 10
RL: BSU (Biological study, unclassified); BIOL (Biological study) (dysfunctional cytomegalovirus-specific CD8+ T cells accumulate in elderly)

L5 ANSWER 30 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Medycyna Doswiadczalna i Mikrobiologia (2004), 56(3), 309-316
CODEN: MDMIAZ; ISSN: 0025-8601
IT Interleukin 10
Interleukin 2
Interleukin 4
Interleukin 5
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study) (strain dependence of cytomegalovirus infection-induced formation of Th1/Th2 cytokines)

L5 ANSWER 31 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
PI WO 2004001424 A1 20031231

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI WO 2004001424	A1	20031231	WO 2003-GB2739	20030624	<--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
CA 2491196	A1	20031231	CA 2003-2491196	20030624	<--
AU 2003236922	A1	20040106	AU 2003-236922	20030624	<--
AU 2003236922	B2	20090312			
EP 1530725	A1	20050518	EP 2003-735842	20030624	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
JP 2005535619	T	20051124	JP 2004-515072	20030624	
IN 2005KN00125	A	20051021	IN 2005-KN125	20050124	
US 20060057156	A1	20060316	US 2005-519044	20050902	

AB . . . certain infectious agents by administration of epitopes derived from those infectious agents. Epitopes derived from viruses which carry homologues of interleukin 10 (IL-10
) in their genome, such as Epstein Barr virus and cytomegalovirus
, are particularly suitable for these purposes. Particularly preferred is the use of the EBV LMP1 and LMP2 proteins and epitopes. . .

L5 ANSWER 32 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Journal of Virology (2003), 77(3), 1703-1717

CODEN: JOVIAM; ISSN: 0022-538X
IT Interleukin 10
Macrophage inflammatory protein 1α
Macrophage inflammatory protein 1β
Macrophage inflammatory protein 2
RANTES (chemokine)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cytokine response by infiltrating T-cells in murine cytomegalovirus infection of submaxillary salivary gland)

L5 ANSWER 33 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO European Journal of Immunology (2003), 33(6), 1528-1538
CODEN: EJIMAF; ISSN: 0014-2980
IT Interleukin 10
Interleukin 12
Interleukin 6
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(human cytomegalovirus impairs dendritic cell function as a novel mechanism of human cytomegalovirus immune escape)

L5 ANSWER 34 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Transplantation Proceedings (2003), 35(4), 1333-1337
CODEN: TRPPA8; ISSN: 0041-1345
AB . . . urine as early markers of the evolution of recipient responses and transplant function after kidney transplantation was evaluated. Increased serum IL-10 levels were associated with severe infectious complications and impending graft loss, despite the observation that the average IL-10 levels did not correlate with the manifestation of any bacterial or cytomegalovirus infection, or tumor development, thus a fatal course due to infection was suggested by increased IL-10 levels. The high IL-10 levels during the early post-transplantation period correlated with the late graft loss or septic complications, and. . .

L5 ANSWER 35 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Scandinavian Journal of Immunology (2003), 57(4), 375-383
CODEN: SJIMAX; ISSN: 0300-9475
IT Interleukin 10
Interleukin 2
Interleukin 4
Interleukin 5
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(partial restoration of cytokine profile despite reconstitution of cytomegalovirus-specific cell-mediated immunity in HIV-infected patients during HAART)

L5 ANSWER 36 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Cellular Immunology (2003), 223(1), 77-86
CODEN: CLIMB8; ISSN: 0008-8749
IT Interleukin 10
Interleukin 18
Interleukin 2
Interleukin 4
Interleukin 6
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(modulation of cytokine expression by interferon-α immunotherapy in cytomegalovirus-induced myocarditis)

L5 ANSWER 37 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN

SO Immunology Letters (2003), 88(1), 31-35
CODEN: IMLED6; ISSN: 0165-2478
IT Interleukin 10
Interleukin 4
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Cytomegalovirus M43 gene modulates T helper cell response)

L5 ANSWER 38 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
TI Genetic and functional dissection of rhesus cytomegalovirus interleukin-10
SO (2002) 140 pp. Avail.: UMI, Order No. DA3065232
From: Diss. Abstr. Int., B 2003, 63(9), 4039
ST Rheus cytomegalovirus interleukin 10 infection
IT Infection
(bacterial; genetic and functional dissection of Rhesus cytomegalovirus interleukin-10)
IT Human
Rhesus cytomegalovirus
(genetic and functional dissection of Rhesus cytomegalovirus interleukin-10)
IT Interleukin 10
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(genetic and functional dissection of Rhesus cytomegalovirus interleukin-10)

L5 ANSWER 39 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
TI Immunologic activities of Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10
PI WO 2002032457 A1 20020425

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002032457	A1	20020425	WO 2001-US23942	20010730 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001080911	A	20020429	AU 2001-80911	20010730 <--
US 20020197234	A1	20021226	US 2001-919224	20010730 <--
EP 1307228	A1	20030507	EP 2001-959344	20010730 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 20050191274	A1	20050901	US 2005-57104	20050210

ST cytomegalovirus interleukin 10 inhibitor lymphocyte proliferation
IT Inflammation
(Crohn's disease; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Intestine, disease
(Crohn's; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Asthma
Autoimmune disease

Blood transfusion
Graves' disease
Hepatitis
Human
Human herpesvirus 5
Immune disease
Inflammation
Leukemia
Macaca mulatta
Multiple sclerosis
Psoriasis
Rhesus cytomegalovirus
Rheumatoid arthritis
Transplant and Transplantation
(Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Cytokines
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Interleukin 1α
Interleukin 6
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Interleukin 10
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Autoimmune disease
Inflammation
Thyroid gland, disease
(autoimmune thyroiditis; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Transplant and Transplantation
Transplant and Transplantation
(bone marrow; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Dermatitis
(contact; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Eye
(cornea, transplant; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Transplant and Transplantation
(cornea; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

IT Allergy
(delayed hypersensitivity; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded

IL-10 in treatment of immune disorders)
IT Toxins
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(endotoxins, shock from; Rhesus cytomegalovirus-encoded
IL-10 and human cytomegalovirus-encoded
IL-10 in treatment of immune disorders)
IT Liver, disease
(fibrosis; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Transplant and Transplantation
(graft-vs.-host reaction; Rhesus cytomegalovirus-encoded
IL-10 and human cytomegalovirus-encoded
IL-10 in treatment of immune disorders)
IT Transplant and Transplantation
(heart; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT T cell (lymphocyte)
(helper cell/inducer, TH1, -type immunity; Rhesus
cytomegalovirus-encoded IL-10 and human
cytomegalovirus-encoded IL-10 in treatment
of immune disorders)
IT Fibrosis
(hepatic; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Intestine, disease
(inflammatory; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Autoimmune disease
(insulin-dependent diabetes mellitus; Rhesus cytomegalovirus
-encoded IL-10 and human cytomegalovirus
-encoded IL-10 in treatment of immune disorders)
IT Diabetes mellitus
(insulin-dependent; Rhesus cytomegalovirus-encoded IL
-10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Transplant and Transplantation
(kidney; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Transplant and Transplantation
(liver; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Transplant and Transplantation
(lung; Rhesus cytomegalovirus-encoded IL-10
and human cytomegalovirus-encoded IL-10
in treatment of immune disorders)
IT Blood
(peripheral; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Mononuclear cell (leukocyte)
(proliferation of; Rhesus cytomegalovirus-encoded IL
-10 and human cytomegalovirus-encoded IL-
10 in treatment of immune disorders)
IT Lymphocyte
(proliferation; Rhesus cytomegalovirus-encoded IL-
10 and human cytomegalovirus-encoded IL-

10 in treatment of immune disorders)
IT Connective tissue, disease
(scleroderma; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Transplant and Transplantation
(skin; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Lupus erythematosus
(systemic; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Shock (circulatory collapse)
(toxic shock syndrome; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Bone marrow
Bone marrow
Heart
Kidney
Liver
Lung
Skin
(transplant; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Inflammation
Intestine, disease
(ulcerative colitis; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Eye, disease
Inflammation
(uveitis; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Infection
Respiratory system, disease
(viral; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT Interferons
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(γ; Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)
IT 83869-56-1, Gmcsf
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Rhesus cytomegalovirus-encoded IL-10 and human cytomegalovirus-encoded IL-10 in treatment of immune disorders)

L5 ANSWER 40 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
TI Potent immunosuppressive activities of cytomegalovirus-encoded interleukin-10. [Erratum to document cited in CA136:261597]
SO Journal of Virology (2002), 76(7), 3585
CODEN: JOVIAM; ISSN: 0022-538X
ST erratum immunosuppression cytomegalovirus interleukin 10
IT Histocompatibility antigens

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-A; immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of MHC antigen expression (Erratum))

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-B; immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of MHC antigen expression (Erratum))

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-C; immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of MHC antigen expression (Erratum))

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-DR; immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of MHC antigen expression (Erratum))

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-G; immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of MHC antigen expression (Erratum))

IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(TNF-α; immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of cytokine production (Erratum))

IT Human
Human herpesvirus 5
Immunosuppressants
Macaca mulatta
Rhesus cytomegalovirus
(immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 (Erratum))

IT Interleukin 10
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 (Erratum))

IT Interleukin 1α
Interleukin 6
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of cytokine production (Erratum))

IT Cell proliferation
Leukocyte
(immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of leukocyte proliferation (Erratum))

IT Interferons
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(γ; immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and inhibition of cytokine production (Erratum))

IT 83869-56-1, Granulocyte macrophage colony stimulating factor
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(immunosuppressive activities of human and rhesus cytomegalovirus-encoded interleukin-10 and

inhibition of cytokine production (Erratum))

L5 ANSWER 41 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Gene Therapy (2002), 9(20), 1369-1378
CODEN: GETHEC; ISSN: 0969-7128
IT Interleukin 10
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(coimmunization with type I interferon genes enhances protective immunity against cytomegalovirus and myocarditis in gB DNA-vaccinated mice)

L5 ANSWER 42 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Immunology and Cell Biology (2002), 80(5), 425-435
CODEN: ICBIEZ; ISSN: 0818-9641
IT Interleukin 10
Interleukin 4
Interleukin 6
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(type I interferon-A6 and interferon-B naked DNA synergistically inhibits cytomegalovirus infection and myocarditis)

L5 ANSWER 43 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
TI Effects of TNFα and IL-10 on cytomegalovirus infection in human embryonic lung fibroblasts
SO Zhongguo Bingli Shengli Zazhi (2002), 18(3), 265-268
CODEN: ZBSZEB; ISSN: 1000-4718
AB The effects of tumor necrosis factor alpha (TNFα) and interleukin-10 (IL-10) on human cytomegalovirus AD169 (HCMV AD169) infection in human embryonic lung fibroblasts (HEL) were studied, and the ability of the infected HEL to. . .
IT Interleukin 10
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(effects of TNFα and IL-10 on cytomegalovirus infection in human embryonic lung fibroblasts)
IT Embryo, animal
Fibroblast
Human
Lung
(human embryonic lung fibroblasts; effects of TNFα and IL -10 on cytomegalovirus infection in human embryonic lung fibroblasts)
IT Cytomegalovirus
Human herpesvirus 5
(infection with; effects of TNFα and IL-10 on cytomegalovirus infection in human embryonic lung fibroblasts)

L5 ANSWER 44 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
TI Sequence, recombinant production, and diagnostic and therapeutic uses of cytomegalovirus IL-10
PI WO 2001016153 A1 20010308

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001016153	A1	20010308	WO 2000-US24213	20000901 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AB The invention provides a DNA mol. (gene cmvIL-10) encoding interleukin 10 (IL-10) from cytomegalovirus strain AD169. The gene cmvIL-10 (UL111a ORF) is located between nucleotides 159678-160364 of the CMV genome (GenBank X17403). The invention. . .

ST DNA sequence cytomegalovirus gene cmvIL10 interleukin 10; recombinant prodn cytomegalovirus interleukin 10 therapeutic diagnostic use

IT DNA sequences
(DNA mol. encoding cytomegalovirus IL-10 gene (cmvIL-10), sequence and diagnostic and therapeutic uses thereof)

IT Gene, microbial
RL: ANT (Analyte); BUU (Biological use, unclassified); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(cmvIL-10; DNA mol. encoding cytomegalovirus IL-10 gene (cmvIL-10), sequence and diagnostic and therapeutic uses thereof)

IT Drugs
(composition; cytomegalovirus IL-10, its sequence, recombinant production, and diagnostic and therapeutic uses including use in IL-10 mediated therapy)

IT Cytomegalovirus
Molecular cloning
Protein sequences
(cytomegalovirus IL-10, its sequence, recombinant production, and diagnostic and therapeutic uses including use in IL-10 mediated therapy)

IT Plasmid vectors
(pEF-SPFL-cmv2; cytomegalovirus IL-10, its sequence, recombinant production, and diagnostic and therapeutic uses including use in IL-10 mediated therapy)

IT Interleukin 10
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(viral; cytomegalovirus IL-10, its sequence, recombinant production, and diagnostic and therapeutic uses including use in IL-10 mediated therapy)

IT 288411-05-2P 329086-63-7P 329086-71-7P
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(amino acid sequence; cytomegalovirus IL-10 , its sequence, recombinant production, and diagnostic and therapeutic uses including use in IL-10 mediated therapy)

IT 329086-62-6
RL: ANT (Analyte); BUU (Biological use, unclassified); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(nucleotide sequence; DNA mol. encoding cytomegalovirus IL-10 gene (cmvIL-10), sequence and diagnostic and therapeutic uses thereof)

IT 329088-19-9 329088-20-2 329088-21-3 329088-22-4 329088-23-5 329088-24-6 329088-25-7 329088-26-8 329088-27-9 329088-28-0 329088-29-1 329088-30-4 329088-31-5 329088-32-6
RL: PRP (Properties)
(unclaimed nucleotide sequence; sequence, recombinant production, and diagnostic and therapeutic uses of cytomegalovirus IL -10)

IT 99549-97-0, Glycoprotein (human herpesvirus 4 19.9-kilodalton protein moiety reduced) 135114-04-4, Interleukin 10 (human clone pH15C precursor reduced) 191290-31-0 239120-26-4
RL: PRP (Properties)
(unclaimed protein sequence; sequence, recombinant production, and diagnostic and therapeutic uses of cytomegalovirus IL -10)

L5 ANSWER 45 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Journal of Immunology (2001), 167(5), 2798-2807
CODEN: JOIMA3; ISSN: 0022-1767
IT Cytokines
Interleukin 10
Interleukin 13
Interleukin 4
Interleukin 5
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(cytomegalovirus infection and Th1/Th2 cytokine expression decreases airway eosinophilia, and enhances mucus production in allergic airway disease)

L5 ANSWER 46 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Journal of Investigative Medicine (2001), 49(5), 434-441
CODEN: JINVFI; ISSN: 1081-5589
ST susceptibility cytomegalovirus interleukin 10
lung infection
IT Interleukin 10
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(susceptibility to cytomegalovirus infection may be dependent on cytokine response to virus)

L5 ANSWER 47 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Cellular Immunology (2001), 213(1), 52-61
CODEN: CLIMB8; ISSN: 0008-8749
IT Interleukin 10
Interleukin 6
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(lipopolysaccharide and tumor necrosis factor in modulating murine cytomegalovirus-induced myocarditis and expression of)

L5 ANSWER 48 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Cytokine (2000), 12(8), 1163-1170
CODEN: CYTIE9; ISSN: 1043-4666
IT Interleukin 10
Interleukin 1β
Interleukin 4
Tumor necrosis factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(stimulatory and inhibitory action of cytokines on the regulation of human cytomegalovirus IE promoter activity in human vascular endothelial cells)

L5 ANSWER 49 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Journal of Medical Virology (2000), 60(2), 223-229
CODEN: JMVIDB; ISSN: 0146-6615
IT Interleukin 10
Interleukin 2

Interleukin 4
Tumor necrosis factors
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(Th1-type cytokines formation is decreased in kidney transplant recipients with active cytomegalovirus infection)

L5 ANSWER 50 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Virology (1998), 240(1), 12-26
CODEN: VIRLAX; ISSN: 0042-6822
IT Interleukin 10
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(murine cytomegalovirus infection-induced polyclonal B cell activation is independent of CD4+ T cells and CD40)

L5 ANSWER 51 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Experimental Lung Research (1998), 24(1), 3-14
CODEN: EXLRDA; ISSN: 0190-2148
IT Interleukin 10
Interleukin 1β
Interleukin 6
Tumor necrosis factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(synergistic activation of human cytomegalovirus major immediate early promoter by prostaglandin E2 and cytokines)

L5 ANSWER 52 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN
SO Journal of Infectious Diseases (1996), 174(5), 913-919
CODEN: JIDIAQ; ISSN: 0022-1899
IT Lymphokines and Cytokines
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(interleukin 10, imbalance in production of cytokines by bone marrow stromal cells following cytomegalovirus infection)

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PASSWORD:
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FILE 'BIOSIS' ENTERED AT 15:12:56 ON 02 JUN 2010
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FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE' ENTERED AT 14:59:16 ON 02 JUN 2010
L1 11 S SLOBEDMAN/AU OR ABENDROTH/AU OR JENKINS/AU
L2 0 S L1 AND IL-10
L3 0 S L1 AND CMV
L4 114 S (INTERLEUKIN-10 OR IL-10) (S) CYTOMEGALOVIRUS AND PD<=2004112
L5 53 DUP REM L4 (61 DUPLICATES REMOVED)

=> D ibib abs L5 1-4, 7, 8, 10, 13, 14, 16, 22, 27

L5 ANSWER 1 OF 53 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2004377251 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15280480
TITLE: Human cytomegalovirus-encoded interleukin -10 homolog inhibits maturation of dendritic cells and alters their functionality.
AUTHOR: Chang W L William; Baumgarth Nicole; Yu Dong; Barry Peter A
CORPORATE SOURCE: Center for Comparative Medicine, University of California, Davis, County Road 98 and Hutchison Drive, Davis, CA 95616, USA.. wlchang@ucdavis.edu
CONTRACT NUMBER: AI49342 (United States NIAID NIH HHS)
RR00169 (United States NCRR NIH HHS)
SOURCE: Journal of virology, (2004 Aug) Vol. 78, No. 16, pp. 8720-31.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC479089.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200409
ENTRY DATE: Entered STN: 29 Jul 2004
Last Updated on STN: 4 Sep 2004
Entered Medline: 3 Sep 2004

AB Interleukin-10 (IL-10) suppresses the maturation and cytokine production of dendritic cells (DCs), key regulators of adaptive immunity, and prevents the activation and polarization of naive T cells towards protective gamma interferon-producing effectors. We hypothesized that human cytomegalovirus (HCMV) utilizes its viral IL-10 homolog (cmvIL-10) to attenuate DC functionality, thereby subverting the efficient induction of antiviral immune responses. RNA and protein analyses demonstrated that the cmvIL-10 gene was expressed with late gene kinetics. Treatment of immature DCs (iDCs) with supernatant from HCMV-infected cultures inhibited both the lipopolysaccharide-induced DC maturation and proinflammatory cytokine production. These inhibitory effects were specifically mediated through the IL-10 receptor and were not observed when DCs were treated with supernatant of cells infected with a cmvIL-10-knockout mutant. Incubation of iDCs with recombinant cmvIL-10

recapitulated the inhibition of maturation. Furthermore, cmvIL-10 had pronounced long-term effects on those DCs that could overcome this inhibition of maturation. It enhanced the migration of mature DCs (mDCs) towards the lymph node homing chemokine but greatly reduced their cytokine production. The inability of mDCs to secrete IL-12 was maintained, even when they were restimulated by the activated T-cell signal CD40 ligand in the absence of cmvIL-10. Importantly, cmvIL-10 potentiates these anti-inflammatory effects, at least partially, by inducing endogenous cellular IL-10 expression in DCs. Collectively, we show that cmvIL-10 causes long-term functional alterations at all stages of DC activation.

L5 ANSWER 2 OF 53 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2004417144 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15322202
TITLE: Shaping phenotype, function, and survival of dendritic cells by cytomegalovirus-encoded IL-10.
AUTHOR: Raftery Martin J; Wieland Dorte; Gronewald Stefanie; Kraus Annette A; Giese Thomas; Schonrich Gunther
CORPORATE SOURCE: Institute of Virology, Charite Medical School, Berlin, Germany.
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (2004 Sep 1) Vol. 173, No. 5, pp. 3383-91.
Journal code: 2985117R. ISSN: 0022-1767. L-ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200409
ENTRY DATE: Entered STN: 24 Aug 2004
Last Updated on STN: 22 Sep 2004
Entered Medline: 21 Sep 2004

AB Human dendritic cells (DCs) are essential for the antiviral immune response and represent a strategically important target for immune evasion of viruses, including human CMV (HCMV). Recently, HCMV has been discovered to encode a unique IL-10 homologue (cmvIL-10). In this study we investigated the capacity of cmvIL-10 to shape phenotype, function, and survival of DCs. For comparison we included human IL-10 and another IL-10 homologue encoded by EBV, which does not directly target DCs. Interestingly, cmvIL-10 strongly activated STAT3 in immature DCs despite its low sequence identity with human IL-10. For most molecules cmvIL-10 blocked LPS-induced surface up-regulation, confirming its role as an inhibitor of maturation. However, a small number of molecules on LPS-treated DCs including IDO, a proposed tolerogenic molecule, showed a different behavior and were up-regulated in response to cmvIL-10. Intriguingly, the expression of C-type lectin DC-specific ICAM-grabbing nonintegrin, a receptor for HCMV infection found exclusively on DCs, was also enhanced by cmvIL-10. This phenotypic change was mirrored by the efficiency of HCMV infection. Moreover, DCs stimulated with LPS and simultaneously treated with cmvIL-10 retained the function of immature DCs. Finally, cmvIL-10 increased apoptosis associated with DC maturation by blocking up-regulation of the antiapoptotic long form cellular FLIP. Taken together, these findings show potential mechanisms by which cmvIL-10 could assist HCMV to infect DCs and to impair DC function and survival.

L5 ANSWER 3 OF 53 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2004101065 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14990702
TITLE: Human cytomegalovirus interleukin-10 downregulates metalloproteinase activity and impairs endothelial cell migration and placental

cytotrophoblast invasiveness in vitro.
AUTHOR: Yamamoto-Tabata Takako; McDonagh Susan; Chang Hsin-Ti; Fisher Susan; Pereira Lenore
CORPORATE SOURCE: Department of Stomatology, University of California-San Francisco, San Francisco, California 94143-0512, USA.
CONTRACT NUMBER: AI46657 (United States NIAID NIH HHS)
AI53782 (United States NIAID NIH HHS)
EY13683 (United States NEI NIH HHS)
HD30367 (United States NICHD NIH HHS)
SOURCE: Journal of virology, (2004 Mar) Vol. 78, No. 6, pp. 2831-40.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC353759.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200404
ENTRY DATE: Entered STN: 2 Mar 2004
Last Updated on STN: 9 Apr 2004
Entered Medline: 8 Apr 2004

AB At the uterine-placental interface, fetal cytotrophoblasts invade the decidua, breach maternal blood vessels, and form heterotypic contacts with uterine microvascular endothelial cells. In early gestation, differentiating- invading cytotrophoblasts produce high levels of matrix metalloproteinase 9 (MMP-9), which degrades the extracellular matrix and increases the invasion depth. By midgestation, when invasion is complete, MMP levels are reduced. Cytotrophoblasts also produce human interleukin-10 (hIL-10), a pleiotropic cytokine that modulates immune responses, helping to protect the fetal hemiallograft from rejection. Human cytomegalovirus (CMV) is often detected at the uterine-placental interface. CMV infection impairs cytotrophoblast differentiation and invasion, altering the expression of the cell adhesion and immune molecules. Here we report that infection with a clinical CMV strain, VR1814, but not a laboratory strain, AD169, downregulates MMP activity in uterine microvascular endothelial cells and differentiating-invading cytotrophoblasts. Infected cytotrophoblasts expressed CMV IL-10 (cmvIL-10) mRNA and secreted the viral cytokine, which upregulated hIL-10. Functional analyses showed that cmvIL-10 treatment impaired migration in endothelial cell wounding assays and cytotrophoblast invasion of Matrigel in vitro. Comparable changes occurred in cells that were exposed to recombinant hIL-10 or cmvIL-10. Our results show that cmvIL-10 decreases MMP activity and dysregulates the cell-cell and/or cell-matrix interactions of infected cytotrophoblasts and endothelial cells. Reduced MMP activity early in placental development could impair cytotrophoblast remodeling of the uterine vasculature and eventually restrict fetal growth in affected pregnancies.

L5 ANSWER 4 OF 53 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2004023559 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14722299
TITLE: A novel viral transcript with homology to human interleukin-10 is expressed during latent human cytomegalovirus infection.
AUTHOR: Jenkins Christina; Abendroth Allison; Slobedman Barry
CORPORATE SOURCE: Centre for Virus Research, Westmead Millennium Institute and University of Sydney, Westmead, New South Wales, 2145 Australia.
SOURCE: Journal of virology, (2004 Feb) Vol. 78, No. 3, pp. 1440-7.

Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC321375.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200402
ENTRY DATE: Entered STN: 15 Jan 2004
Last Updated on STN: 25 Feb 2004
Entered Medline: 24 Feb 2004

AB Human cytomegalovirus (CMV) establishes latent infections in hematopoietic cells such as granulocyte-macrophage progenitors (GM-Ps). During latency the virus is sequestered in a nonreplicating state, although limited transcriptional activity has been previously reported. In this study we sought to further examine viral gene expression during the latent phase of infection. Using an experimental model of latency, primary human GM-Ps were latently infected with CMV strain Toledo and extracted RNA subjected to reverse transcription-PCR by using CMV gene-specific primers. Using this approach, we detected transcription from the UL111.5A region of the viral genome. This transcription was also detected in GM-Ps latently infected with AD169 and Towne strains, indicating that expression was CMV strain independent. Significantly, we detected UL111.5A-region transcripts in mononuclear cells from healthy bone marrow and mobilized peripheral blood allograft donors, demonstrating expression during natural latent infection. Mapping experiments with RNA extracted from latently infected GM-Ps revealed the expression of a novel UL111.5A region transcript with a splicing pattern that differed from that reported during productive infection of permissive cells. This UL111.5A region transcript expressed during latent infection is predicted to encode a 139-amino-acid protein with homology to the potent immunosuppressor interleukin-10 (IL-10) and to the viral IL-10 homolog that is expressed during productive CMV infection. Expression of a latency-associated cmvIL-10 may confer upon the virus an ability to avoid immune recognition and clearance during the latent phase of infection.

L5 ANSWER 7 OF 53 MEDLINE on STN DUPLICATE 7
ACCESSION NUMBER: 2003576750 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14610657
TITLE: Cytomegalovirus infection induces production of human interleukin-10 in macrophages.
AUTHOR: Nordoy I; Rollag H; Lien E; Sindre H; Degre M; Aukrust P; Froland S S; Muller F
CORPORATE SOURCE: Institute of Microbiology, Rikshospitalet, 0027 Oslo, Norway.
SOURCE: European journal of clinical microbiology & infectious diseases : official publication of the European Society of Clinical Microbiology, (2003 Dec) Vol. 22, No. 12, pp. 737-41. Electronic Publication: 2003-11-11.
Journal code: 8804297. ISSN: 0934-9723. L-ISSN: 0934-9723.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200402
ENTRY DATE: Entered STN: 16 Dec 2003
Last Updated on STN: 21 Feb 2004
Entered Medline: 20 Feb 2004

AB Earlier findings have suggested that the balance between interleukin-10 and tumor necrosis factor alpha levels in serum may influence the outcome of cytomegalovirus infection in

renal transplant recipients. Therefore, the aim of the present study was to investigate whether human cytomegalovirus induces interleukin-10 production in macrophages. Experiments using human cytomegalovirus (strain 2006), ultraviolet-inactivated cytomegalovirus, and mock-infected differentiated THP-1 cells with or without ganciclovir or monoclonal anti-tumor necrosis factor alpha antibodies were performed. Cytomegalovirus-infected cells produced significantly higher levels of human interleukin-10 mRNA and interleukin-10 than ultraviolet-inactivated cytomegalovirus or mock-infected cells. The addition of ganciclovir had little effect on interleukin-10 production. Anti-tumor necrosis factor alpha antibodies appeared to reduce the interleukin-10 levels. In conclusion, human cytomegalovirus infection of macrophages induces production of human interleukin-10. This requires viral entry, but not full viral replication.

L5 ANSWER 8 OF 53 MEDLINE on STN DUPLICATE 8
ACCESSION NUMBER: 2002373101 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12093920
TITLE: Crystal structure of human cytomegalovirus IL-10 bound to soluble human IL-10R1.
AUTHOR: Jones Brandi C; Logsdon Naomi J; Josephson Kristopher; Cook Jennifer; Barry Peter A; Walter Mark R
CORPORATE SOURCE: Center for Biophysical Sciences and Engineering, Department of Microbiology, University of Alabama, 1025 18th Street South, Birmingham, AL 35294, USA.
CONTRACT NUMBER: AI47300 (United States NIAID NIH HHS)
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (2002 Jul 9) Vol. 99, No. 14, pp. 9404-9. Electronic Publication: 2002-07-01. Journal code: 7505876. ISSN: 0027-8424. L-ISSN: 0027-8424. Report No.: NLM-PMC123153.
PUB. COUNTRY: United States
DOCUMENT TYPE: (IN VITRO)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: PDB-1LQS
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 17 Jul 2002
Last Updated on STN: 5 Jan 2003
Entered Medline: 8 Aug 2002

AB Human IL-10 (hIL-10) modulates critical immune and inflammatory responses by way of interactions with its high- (IL-10R1) and low-affinity (IL-10R2) cell surface receptors. Human cytomegalovirus exploits the IL-10 signaling pathway by expressing a functional viral IL-10 homolog (cmvIL-10), which shares only 27% sequence identity with hIL-10 yet signals through IL-10R1 and IL-10R2. To define the molecular basis of this virus-host interaction, we determined the 2.7-A crystal structure of cmvIL-10 bound to the extracellular fragment of IL-10R1 (sIL-10R1). The structure reveals cmvIL-10 forms a disulfide-linked homodimer that binds two sIL-10R1 molecules. Although cmvIL-10 and hIL-10 share similar intertwined topologies and sIL-10R1 binding sites, their respective interdomain angles differ by approximately 40 degrees. This difference results in a striking re-organization of the IL-10R1s in the putative cell surface complex. Solution binding studies show cmvIL-10 and hIL-10 share essentially identical affinities for sIL-10R1 whereas the Epstein-Barr virus IL-10 homolog (ebvIL-10), whose structure is highly similar to hIL-10, exhibits a approximately 20-fold reduction in sIL-10R1 affinity. Our results suggest cmvIL-10 and ebvIL-10

have evolved different molecular mechanisms to engage the IL-10 receptors that ultimately enhance the respective ability of their virus to escape immune detection.

L5 ANSWER 10 OF 53 MEDLINE on STN DUPLICATE 10
ACCESSION NUMBER: 2002051344 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11773404
TITLE: Potent immunosuppressive activities of cytomegalovirus-encoded interleukin-10.
AUTHOR: Spencer Juliet V; Lockridge Kristen M; Barry Peter A; Lin Gaofeng; Tsang Monica; Penfold Mark E T; Schall Thomas J
CORPORATE SOURCE: ChemoCentryx, San Carlos, California 94070, USA.
CONTRACT NUMBER: 1-R01-HL57883 (United States NHLBI NIH HHS)
SOURCE: Journal of virology, (2002 Feb) Vol. 76, No. 3, pp. 1285-92.
Journal code: 0113724. ISSN: 0022-538X. L-ISSN: 0022-538X.
Report No.: NLM-PMC135865.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200202
ENTRY DATE: Entered STN: 25 Jan 2002
Last Updated on STN: 20 Apr 2002
Entered Medline: 12 Feb 2002
AB Cytomegalovirus (CMV) has highly evolved mechanisms for avoiding detection by the host immune system. Recently, in the genomes of human and primate CMV, a novel gene comprising segments of noncontiguous open reading frames was identified and found to have limited predicted homology to endogenous cellular interleukin-10 (IL-10). Here we investigate the biological activities of the CMV IL-10-like gene product and show it to possess potent immunosuppressive properties. Both purified bacterium-derived recombinant CMV IL-10 and CMV IL-10 expressed in supernatants of human cells were found to inhibit proliferation of mitogen-stimulated peripheral blood mononuclear cells (PBMCs), with specific activity comparable to that of recombinant human IL-10. In addition, CMV IL-10 expressed from human cells inhibited cytokine synthesis, as treatment of stimulated PBMCs and monocytes with CMV IL-10 led to a marked decrease in production of proinflammatory cytokines. Finally, CMV IL-10 was observed to decrease cell surface expression of both major histocompatibility complex (MHC) class I and class II molecules, while conversely increasing expression of the nonclassical MHC allele HLA-G. These results demonstrate for the first time that CMV has a biologically active IL-10 homolog that may contribute to immune evasion during virus infection.

L5 ANSWER 13 OF 53 MEDLINE on STN DUPLICATE 14
ACCESSION NUMBER: 2000144103 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10677520
TITLE: Human cytomegalovirus harbors its own unique IL-10 homolog (cmvIL-10).
AUTHOR: Kotenko S V; Saccani S; Izotova L S; Mirochnitchenko O V; Pestka S
CORPORATE SOURCE: Department of Molecular Genetics, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ 08854-5635, USA.. kotenkse@umdnj.edu
CONTRACT NUMBER: 1P30-CA72720 (United States NCI NIH HHS)
R01 AI36450 (United States NIAID NIH HHS)
R01-CA46465 (United States NCI NIH HHS)
+
SOURCE: Proceedings of the National Academy of Sciences of the

United States of America, (2000 Feb 15) Vol. 97, No. 4, pp. 1695-700.
Journal code: 7505876. ISSN: 0027-8424. L-ISSN: 0027-8424.
Report No.: NLM-PMC26498.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200003
ENTRY DATE: Entered STN: 30 Mar 2000
Last Updated on STN: 30 Mar 2000
Entered Medline: 23 Mar 2000

AB We identified a viral IL-10 homolog encoded by an ORF (UL111a) within the human cytomegalovirus (CMV) genome, which we designated cmvIL-10. cmvIL-10 can bind to the human IL-10 receptor and can compete with human IL-10 for binding sites, despite the fact that these two proteins are only 27% identical. cmvIL-10 requires both subunits of the IL-10 receptor complex to induce signal transduction events and biological activities. The structure of the cmvIL-10 gene is unique by itself. The gene retained two of four introns of the IL-10 gene, but the length of the introns was reduced. We demonstrated that cmvIL-10 is expressed in CMV-infected cells. Thus, expression of cmvIL-10 extends the range of counter measures developed by CMV to circumvent detection and destruction by the host immune system.

L5 ANSWER 14 OF 53 MEDLINE on STN DUPLICATE 15
ACCESSION NUMBER: 2001023850 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10914840
TITLE: Suppression of collagen induced arthritis in mice utilizing plasmid DNA encoding interleukin 10.
AUTHOR: Miyata M; Sasajima T; Sato H; Saito A; Saito A; Iriswa A; Sato Y; Kasukawa R
CORPORATE SOURCE: Department of Internal Medicine II, Fukushima Medical University School of Medicine, Japan..
metm@msg.biglobe.ne.jp
SOURCE: The Journal of rheumatology, (2000 Jul) Vol. 27, No. 7, pp. 1601-5.
Journal code: 7501984. ISSN: 0315-162X. L-ISSN: 0315-162X.
PUB. COUNTRY: Canada
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200011
ENTRY DATE: Entered STN: 22 Mar 2001
Last Updated on STN: 22 Mar 2001
Entered Medline: 16 Nov 2000

AB OBJECTIVE: To investigate the therapeutic efficacy as well as the immunological effects of inoculation of an expression vector encoding interleukin 10 (IL-10) in murine type II collagen induced arthritis (CIA). METHODS: CIA was induced in DBA/1 Lac/J mice by immunization with bovine type II collagen (CII) in Freund's complete adjuvant (FCA), followed by immunization of CII in Freund's incomplete adjuvant (FIA) 3 weeks later (CIA mice). The plasmid cytomegalovirus (pCMV) vector encoding IL-10 (pCMV-IL-10) was inoculated intradermally into DBA/1 Lac/J mice (pCMV-IL-10 CIA mice) one week prior to first immunization with CII. CIA mice inoculated with the backbone pCMV vector instead of pCMV-IL-10(pCMV CIA mice), mice inoculated with the pCMV vector alone, without subsequent immunization

with CII (pCMV-C mice), and mice not subjected to any treatment (C mice) were examined as controls. At the 3rd and 5th week after 2nd immunization with CII, booster injections of CII in FIA were administered. Foot pad thicknesses were measured weekly and the histopathological changes in the ankle joints and the titers of IgG1 (Th2 type) and IgG2a (Th1 type) isotype antibodies to CII were examined at the 10th week. RESULTS: pCMV-IL-10 CIA mice showed lesser foot pad thicknesses ($p < 0.01$ except at Weeks 1-3), less severe histopathological changes ($p < 0.01$ or 0.05) and lower IgG2a/IgG1 ratios of antibodies to CII ($p < 0.01$) than CIA mice. CONCLUSION: Inoculation of pCMV-IL-10 suppressed CIA through suppression of the Th 1 type immune response in CIA, and offers promise as a potential therapeutic strategy for rheumatoid arthritis.

L5 ANSWER 16 OF 53 MEDLINE on STN DUPLICATE 17
ACCESSION NUMBER: 2000171829 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10704336
TITLE: Primate cytomegaloviruses encode and express an IL-10-like protein.
AUTHOR: Lockridge K M; Zhou S S; Kravitz R H; Johnson J L; Sawai E T; Blewett E L; Barry P A
CORPORATE SOURCE: Center for Comparative Medicine, University of California-Davis, Davis, California, 95616, USA.. kmloefler@ucdavis.edu
CONTRACT NUMBER: P51 RR-AG00169 (United States NCRR NIH HHS)
R01 HD-57883 (United States NICHD NIH HHS)
R01 NS-36859 (United States NINDS NIH HHS)
SOURCE: Virology, (2000 Mar 15) Vol. 268, No. 2, pp. 272-80.
Journal code: 0110674. ISSN: 0042-6822. L-ISSN: 0042-6822.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF200417
ENTRY MONTH: 200004
ENTRY DATE: Entered STN: 27 Apr 2000
Last Updated on STN: 27 Apr 2000
Entered Medline: 18 Apr 2000
AB An open reading frame (ORF) with homology to interleukin-10 (IL-10) has been identified in rhesus cytomegalovirus (RhCMV). The IL-10-like protein is generated from a multispliced, polyadenylated early gene transcript encompassing part of the corresponding UL111A ORF of human CMV (HCMV). Immunological analyses confirm expression of the IL-10-like protein both in tissue culture and in RhCMV-infected rhesus macaques. Conserved ORFs were subsequently identified in human, baboon, and African green monkey CMV, and a fully processed transcript has been mapped in fibroblasts infected with the Towne strain of HCMV. The conservation of this previously unrecognized ORF suggests that the protein may play an essential role in primate CMV persistence and pathogenesis.

L5 ANSWER 22 OF 53 BIOSIS on STN
ACCESSION NUMBER: 2005:64620 BIOSIS
DOCUMENT NUMBER: PREV200500067676
TITLE: Structural features of the interleukin-10 family of cytokines.
AUTHOR(S): Zdanov, Alexander [Reprint Author]

CORPORATE SOURCE: Macromol Crystallog LabCanc Res Ctr, NCI, Frederick, MD, 21702, USA
zdanov@ncifcrf.gov
SOURCE: Current Pharmaceutical Design, (2004) Vol. 10, No. 31, pp. 3873-3884. print.
ISSN: 1381-6128 (ISSN print).
DOCUMENT TYPE: Article
General Review; (Literature Review)
LANGUAGE: English
ENTRY DATE: Entered STN: 9 Feb 2005
Last Updated on STN: 9 Feb 2005

L5 ANSWER 27 OF 53 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 11
ACCESSION NUMBER: 2001:361276 CAPLUS
DOCUMENT NUMBER: 135:136309
TITLE: Reduced expression of HLA class II molecules and interleukin-10- and transforming growth factor β1-independent suppression of T-cell proliferation in human cytomegalovirus -infected macrophage cultures
AUTHOR(S): Odeberg, Jenny; Soderberg-Naucler, Cecilia
CORPORATE SOURCE: Karolinska Institute, Division of Clinical Immunology, Huddinge Hospital, Stockholm, Swed.
SOURCE: Journal of Virology (2001), 75(11), 5174-5181
CODEN: JOVIAM; ISSN: 0022-538X
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB After a primary infection, human cytomegalovirus (HCMV) establishes lifelong latency in myeloid lineage cells, and the virus has developed several mechanisms to avoid immune recognition and destruction of infected cells. Here, the authors show that HCMV utilizes 2 different strategies to reduce the constitutive expression of HLA-DR, -DP, and -DQ on infected macrophages and that infected macrophages are unable to stimulate a specific CD4+ T-cell response. Downregulation of the HLA class II mols. was observed in 90% of the donor samples and occurred in 2 phases: at an early [1 day postinfection (dpi)] time point postinfection and at a late (4 dpi) time point postinfection. The early inhibition of HLA class II expression and antigen presentation was not dependent on active virus replication, since UV-inactivated virus induced downregulation of HLA-DR and inhibition of T-cell proliferation at 1 dpi. In contrast, the late effect required virus replication and was dependent on the expression of the HCMV unique short (US) genes US1-9 or US11 in 77% of the samples. HCMV-treated macrophages were completely devoid of T-cell stimulation capacity at 1 and 4 dpi. However, while downregulation of HLA class II expression was rather mild, a 66-90% reduction in proliferative T-cell response was observed This discrepancy was due to undefined soluble factors produced in HCMV-infected cell cultures, which did not include interleukin-10 and transforming growth factor β1. Thus, HCMV reduces expression of HLA class II mols. on HCMV-infected macrophages and inhibits T-cell proliferation by different distinct pathways.
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REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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